



## **SOUTH CAROLINA RABBIT HUNTER SURVEY 2010-2011**

The Small Game Project, South Carolina Department of Natural Resources (DNR), implemented the South Carolina Rabbit Hunter Survey in the 1991-92 season. The survey was designed to provide reliable, quantitative information about rabbit numbers and rabbit hunter success across the state.

This report presents information from the latest survey and compares data collected for the past 10 years. Information is used to identify trends in rabbit populations and rabbit hunting activities in South Carolina.

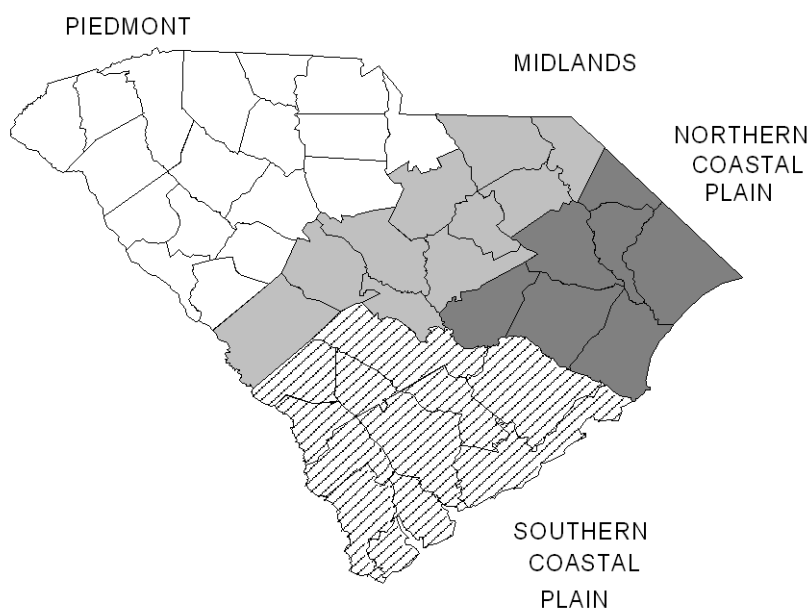
### **METHODS**

Individuals contacted for this rabbit hunter survey included respondents to last year's survey and persons who called, emailed or wrote requesting a survey form this past year. Potential survey cooperators are also solicited through public presentations and the DNR website.

A total of 59 individuals were provided with data sheets, instructions and self-addressed stamped envelopes prior to the start of the 2010-11 rabbit hunting season. Cooperators were asked to keep accurate records of their hunting activities and to provide the following information about each individual hunt: date and county of hunt, number of hunters, number of hours hunted, number of rabbits jumped, number of rabbits harvested, quail coveys and woodcock flushed. Additional information requested includes the number and species of rabbits bagged during the season along with comments on dog performance and season quality. Information on food habits, diseases and general comments was also requested.

At the end of the hunting season, a reminder card was sent to each individual asking that the survey form be returned. A period of 60 days was allowed for hunters to respond. Data were analyzed by county, geographic region and statewide basis.

South Carolina is divided into four broad geographic regions (Fig. 1) based on habitat. The "Piedmont" encompasses about 1/3 of the state and includes the mountain and foothills area. The "Midlands" extends on a broad northeast/southwest axis across the upper coastal plain of the state. The "Pee Dee" region is located on the northern lower coastal plain and the "Low Country" is situated in the southern lower coastal plain.



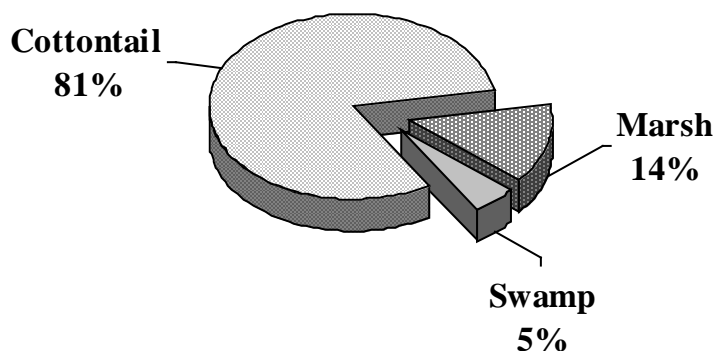
**Figure 1. Physiographic regions of South Carolina, South Carolina Rabbit Hunter Survey.**

## **RESULTS AND DISCUSSION**

### **STATEWIDE**

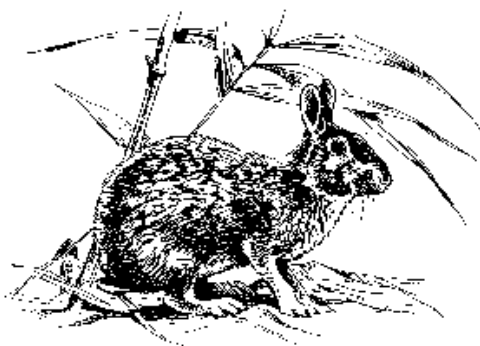
A total of 35 individuals responded to the survey for a 59% response rate from potential cooperators. Survey cooperators recorded 639 hunts and logged 2,845 hours in the field. Hunting parties averaged four individuals per trip and the average hunt length was 4.5 hours. Based on this information, survey cooperators and their companions expended a minimum of 11,380 man-hours in pursuit of rabbits during the 2010-11 season.

Hunting parties jumped an average of 1.43 rabbits per hour and harvested 0.77 rabbits per hour. Based on these figures 54% of the rabbits jumped were harvested. Cottontails (*Sylvilagus floridanus*) were the predominant species reported harvested followed by marsh rabbits (*S. palustris*) and swamp rabbits (*S. aquaticus*), respectively (Fig. 2).

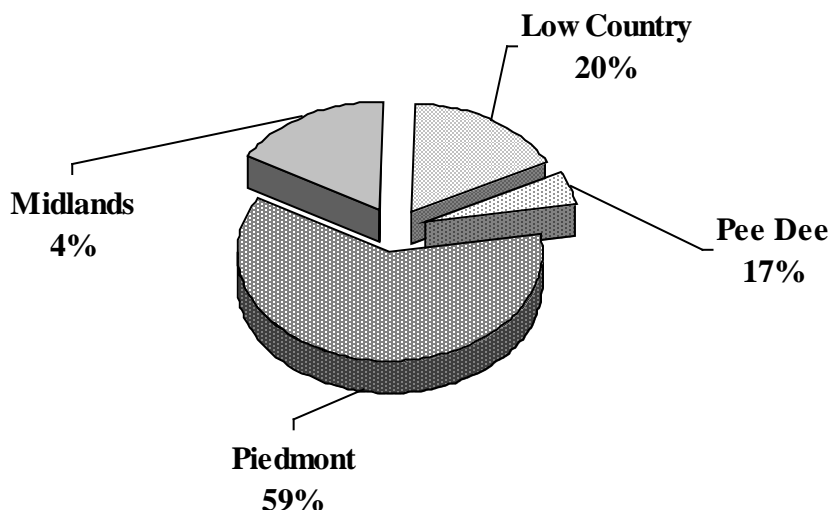


**Figure 2. Reported species composition of rabbits harvested by cooperators, South Carolina Rabbit Hunter Survey, 2010-11.**

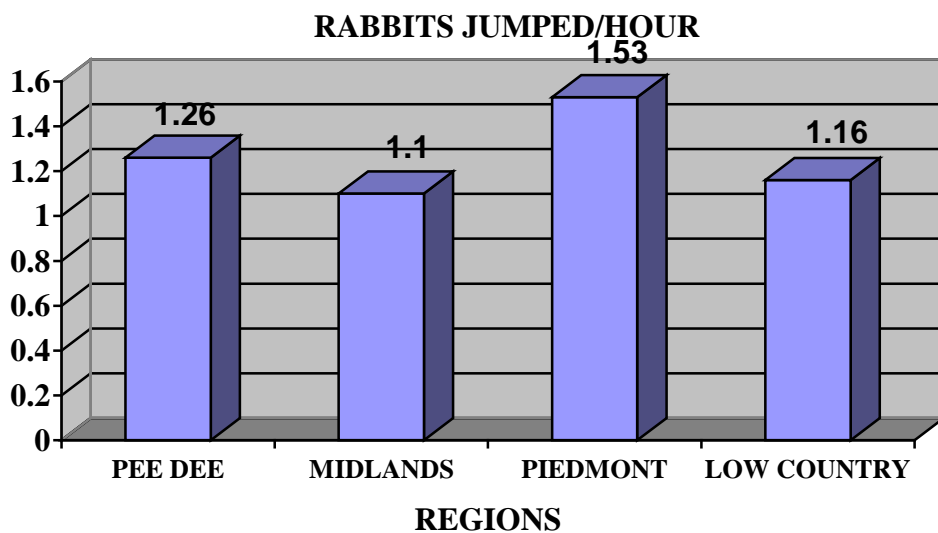
Historically, swamp rabbits have been documented only in the Savannah River drainage of Oconee, Pickens and Anderson Counties (Webster et. al. 1985, Platt and Bunch 2000). It is likely that some marsh rabbits are mistakenly identified as swamp rabbits. Cooperators are provided with a fact sheet describing how to distinguish the three species of rabbits.



A majority (59%) of the rabbit hunting activity documented in South Carolina occurred in the Piedmont Region (374 hunts) and the least amount of activity occurred in the Midlands at 4% (27 hunts) (Fig. 3). The highest rabbit-jumping rate (1.53) was recorded in the Piedmont hunts. The Pee Dee, Low Country and Midlands recorded 1.26, 1.16, and 1.10 rabbits jumped per hour, respectively (Fig. 4).



**Figure 3. Percentage of expended hunting time by region, South Carolina Rabbit Hunter Survey, 2010-11.**



**Figure 4. Average number of rabbits jumped per hour by region, South Carolina Rabbit Hunter Survey, 2010-11.**

## COUNTY RESULTS

Survey cooperators reported rabbit hunting activity from 42 of the 46 counties in South Carolina during the 2010-11 season. Abbeville County led the state in hunter effort (hours hunted) with hunters logging 228 hours in the field during 57 hunts. Following Abbeville in hunter effort were Hampton (200 hours, 41 hunts) and Chester (168 hours, 39 hunts).

The top five counties, in terms of rabbits jumped per hour (based on a minimum of 25 hunts), were: Saluda (2.63), Lee (2.07), followed by Chester (1.74), Edgefield (1.59) and Anderson (1.38). Jumping rates may have variables affecting them such as shooting (or not shooting) on the initial jump, cover thickness delaying a killing shot during the chase, and letting the dogs run for exercise or training. However, jumping rates do give an index to the relative abundance of rabbits in a given area.

## COMPARISON TO 2009-10 SURVEY

The number of individuals provided with data sheets decreased from 147 to 59 and individuals responding increased from 30 to 35. Response rate increased from 20% to 59%, primarily due to a decrease in the number of hunters contacted to participate in the survey. Number of hunts (639) recorded by all hunting parties increased from 556 with a corresponding increase in total hours afield from 2,440 to 2,845 hours. Average hunt length remained the same at 4.5 hours. The minimum number of man-hours expended by rabbit hunters and their companions increased from 9,760 to 11,380.

Number of rabbits jumped per hour increased significantly ( $P < 0.05$ ) from 1.20 in 2009-10 to 1.43 in 2010-11. Rabbits harvested per hour also increased from 0.70 to 0.77.

Statewide, quail flushes remained the same at 0.03 coveys per hour and the number of coveys flushed decreased from 70 in 2009-10 to 65 in 2010-11. Woodcock flushed per hour decreased from 0.12 to 0.07 and the number of woodcocks flushed decreased from 286 to 188 for 2010-11. This was the 15th year data were collected on number of woodcocks flushed.

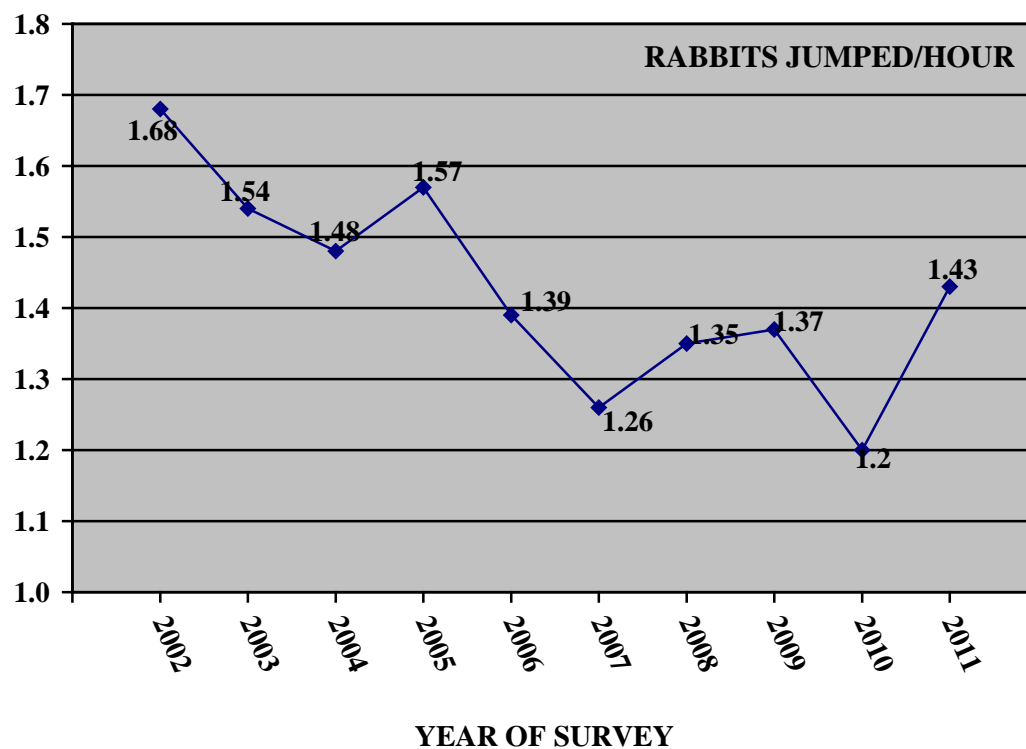
The number of counties reporting rabbit hunting activity increased for the fifth year from 40 to 42 this past season. In 2010-11 Abbeville, Hampton and Chester counties were first, second and third, respectively, in hunter effort (hours hunted), followed by Lee and Anderson counties. In terms of rabbits jumped per hour (minimum of 25 hunts), Saluda, Lee, Chester, Edgefield and Anderson were the top five counties.

Table 3 summarizes the data collected for the past 10 years of the survey and Figure 5 shows the trend in rabbits jumped per hour. The number of rabbits jumped per hour fluctuates annually but has remained relatively stable over the past 10 years. Due to the relatively small sample sizes of cooperators and hunts, factors other than rabbit abundance can contribute significantly to changes in the rabbits jumped per hour index.

**Table 3. Statewide results, South Carolina Rabbit Hunter Survey, 2002-2011.**

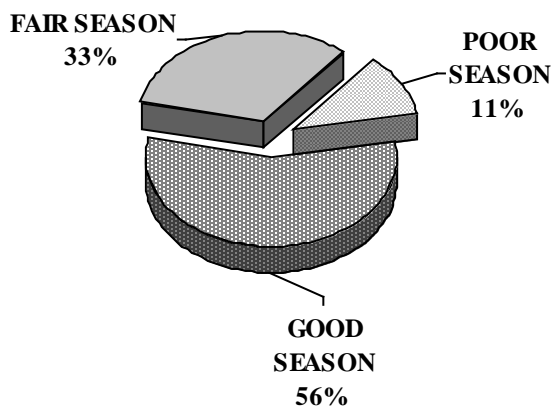
YEAR OF SURVEY	RABBITS JUMPED PER HOUR	RABBITS HARVESTED PER HOUR	QUAIL COVEYS FLUSHED PER HOUR
2001-02	1.68	1.00	0.04
2002-03	1.54*	0.92*	0.03
2003-04	1.48*	0.90	0.04
2004-05	1.57*	0.98*	0.05
2005-06	1.39*	0.84*	0.04
2006-07	1.26*	0.77*	0.03
2007-08	1.35*	0.83*	0.02
2008-09	1.37	0.78*	0.04
2009-10	1.20*	0.70*	0.03
2010-11	1.43*	0.77	0.03

\*Significantly different from the previous year ( $P < 0.05$ )

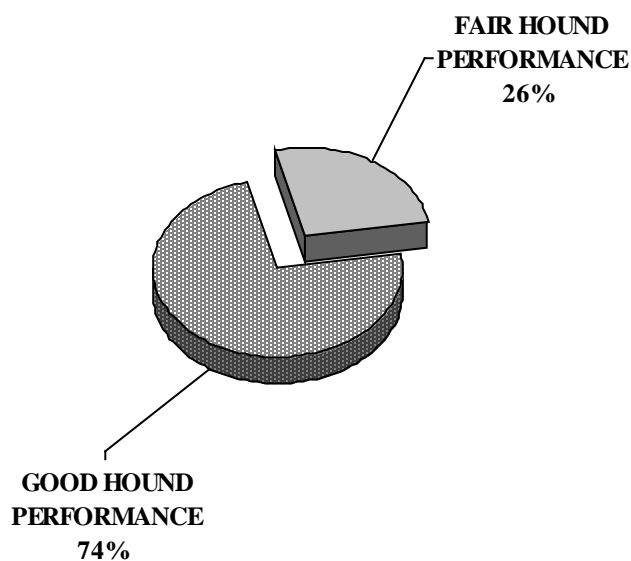
**Figure 5. Rabbits jumped per hour, South Carolina Rabbit Hunter Survey, 2002-11.**

## COOPERATOR COMMENTS

As a whole, most cooperators rated the 2010-11 rabbit-hunting season as good or fair with 11% rating the season as poor (Fig. 6). All cooperators rated the performance of their dogs as good or fair (Fig. 7).



**Figure 6. Rating of season quality by cooperators, South Carolina Rabbit Hunter Survey, 2010-11.**



**Figure 7. Rating of hound performance by cooperators, South Carolina Rabbit Hunter Survey, 2010-11.**

Cooperators reported cold, wet days, including freezing temperatures and snow as having a negative influence on hunting this past year. Four cooperators expressed concern over a perceived increase in predators, especially coyotes. Several cooperators indicated that rabbit populations seemed to be up in areas that they hunted when compared to past years, while a few cooperators indicated that populations were down. Lack of quality rabbit habitat on public lands and restricted access on private lands leased by deer hunting clubs remain as concerns among cooperators in the survey.

When used as an index of abundance, the rabbit jumping rate for the 2010-11 rabbit season would indicate an increase in population from the previous year. However, cooperators and other rabbit hunters should bear in mind that numerous factors like weather and dog performance also have significant impacts on the rabbit jump rate. As in all wildlife species, rabbit populations are directly linked to the quantity and quality of available habitat.

## **SUMMARY**

The 2010-11 Rabbit Hunter Survey marked the 20th year of building a database on rabbit populations and rabbit hunter success in South Carolina. Plans are to continue this survey during the 2011-2012 season. Additional efforts will be made to increase cooperator response as well as reporting accuracy.

If you are aware of someone who hunts rabbits but does not participate in this survey, please encourage them to do so. Potential cooperators should contact the DNR Small Game Project at 803-734-3609 or [castinep@dnr.sc.gov](mailto:castinep@dnr.sc.gov).

**A reminder for next year: Data cannot be entered without hunter name and address or if all hunts are submitted as one entry.**

## **LITERATURE CITED**

Webster, W. D., J. F. Parnell, Jr. and W. C. Biggs, Jr. 1985. Mammals of the Carolinas, Virginia and Maryland. The University of North Carolina Press.

Platt, Steven G., and Mary Bunch. 2000. Distribution and Status of the Swamp Rabbit in South Carolina. Proc Annual Conference, Southeast Association Fish and Wildlife Agencies 54:407-413.